REMARKS

Applicant submits a proposed drawing correction showing adequate labels. No new matter has been added.

The examiner continues to use Brown, and particularly FIGs. 2B, 11A and 11B, to reject claims 1-5, 9 and 13-17 as having been anticipated and as having been obvious.

Applicant has cancelled claims 1-5, 9 and 13-17 and added new claims 23-36 to more clearly point out the distinctions of the current invention over Brown.

Claim 23 and 28 recite "a large table at a root, the root branching to nodes containing small trie tables." At least this claimed feature is totally absent in Brown.

Brown discloses a table. More specifically, "the lookup table 100 includes three mappers 106a-c. Each mapper 106a-c includes a separately addressed memory. The lookup table 100 provides a route index 102 for a key 104. The route index 102 is used to access the next hop for the IP destination address." (Col. 5, lines 31-37) Brown's FIG. 2B "illustrates a binary tree representation of the entries stored in the mappers 106a-c in the lookup table 100 shown in FIG. 2A." (Col. 5, lines 46-48). Applicant interprets this, as anyone skilled in this would, as disclosing a table containing entries, each of the entries being a binary tree.

The table of FIG. 2B includes three entries. The three entries are mapper level 1 (112a), mapper level 2 (112b) and mapper level 3 (112c). The first table entry 112a contains a binary tree with a root 114 and pointers to binary trees stored in the second table entry 112b. The second table entry 112b contains two binary trees with unlabeled root nodes and pointers to binary trees stored in the third table entry 112c. The third table entry 112c contains four binary trees with unlabeled root nodes.

These Brown binary trees stored as entries in a table and linked via pointers are vastly different from a large table at a root, the root branching to small trie tables, as claimed in claim 23. Brown does not disclose or suggest a large table at a root, only a first table entry 112a containing a binary tree. Brown does not disclose or suggest the root branching to small trie tables, only table entries pointing to table entries, each of the table entries including one or more binary trees.

F1

F2

The examiner argues that "the designation of "tables" versus "trees" is merely a matter of semantics, as a table could represent a tree structure and a certain level in a tree represents a table." Applicants are bewildered with this interpretation.

As one skilled in this art clearly recognizes, a tree structure is an algorithm for placing and locating files (called records or keys) in a database. The algorithm finds data by repeatedly making choices at decision points called nodes. A node can have as few as two branches (also called children), or as many as several dozen. The structure is straightforward, but in terms of the number of nodes and children, a tree can be gigantic.

In a tree, records are stored in locations called leaves. This name derives from the fact that records always exist at end points; there is nothing beyond them. The starting point is called the root. The maximum number of children per node is called the order of the tree. The maximum number of access operations required to reach the desired record is called the depth. In some trees, the order is the same at every node and the depth is the same for every record. This type of structure is said to be balanced. Other trees have varying numbers of children per node, and different records might lie at different depths. In that case, the tree is said to have an unbalanced or asymmetrical structure.

A table is a data structure used to organize information, just as it is on paper. A table (also called an array) is a organized grouping of fields. A table can be one dimensional, having a many rows in a single column, or multi-dimensional, such as one having many rows and columns.

Accordingly, the designation of "tables" versus "trees" is not merely a matter of semantics.

Brown's table does not represent a tree. Brown's table represents a table. Brown's table is one dimensional, having three rows (entries 112a, 112b, 112c) in a single column. Each row of Brown's table includes trees. As the examiner has failed to recognize, applicant does claim any tables having trees as entries. Applicant claims a large table at a root, the root branching to nodes containing small trie tables. Accordingly, claims 23 and 28 are not anticipated or made obvious by Brown.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment/cancellation of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment/cancellation.

Applicant asks that all claims be examined in view of the amendment to the claims.

Enclosed is a $770 check for excess claim fees. Please apply any other charges or credits to deposit account 06-1050.

Respectfully submitted,

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